



Jet Propulsion Laboratory  
California Institute of Technology

# NN-EXPLORE

NASA-NSF Exoplanet Observational Research Program

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# Why NN-EXPLORE?



ExoPlanet Exploration Program

- Astro2010 Decadal Survey:

"NASA and NSF should support an aggressive program of ground-based high-precision radial velocity surveys of nearby stars in order to **validate and characterize exoplanet candidates.**"

- National Academies Exoplanet Science Strategy - 2018:

"NASA and NSF should establish a strategic initiative in extremely precise radial velocities (EPRVs) to develop methods and facilities for **measuring the masses** of temperate terrestrial planets orbiting Sun-like stars."

- Astro 2020 Decadal Survey:

"The panel advocates that together NASA and NSF address the grand challenge of achieving the precision required to **measure the masses** of terrestrial planets orbiting Sun-like stars, which implies a single measurement precision of 10 cm/s and control of systematics at the level of 1 cm/s."

"While such measurements will be done from the ground, they are **inextricably linked to the scientific success of numerous current and proposed missions**, namely the legacy Kepler/K2 data set, the ongoing TESS Mission, and a future direct imaging mission."



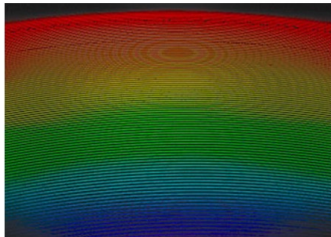
## WIYN/NEID and Guest Observing (GO)

120 nights of GO on WIYN (3.5 m); Maintain the NEID spectrograph; fund users; process and archive the data (including solar data).



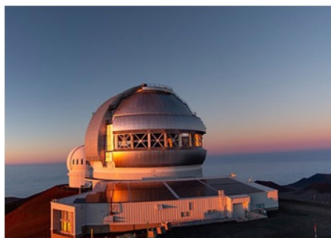
## Southern RV Observing Opportunities

Radial velocity observing time in the southern hemisphere is available for US institutions on SMARTS/Chiron and MINERVA-Australis.



## NASA-NSF EPRV Initiative

Organize the Research Coordination Network and EPRV conferences



## High Resolution Speckle Imaging of Exoplanet Host Stars

Three high resolution speckle imaging instruments (NESSI at WIYN, 'Alopeke in Gemini North, and Zorro in Gemini South) are available for US institutions.

More information: <https://exoplanets.nasa.gov/exep/NNExplore/>

# Other Exoplanet sessions

Google Exopag27 -> Exoplanet related sessions during the AAS

Exoplanet Exploration Program

## Exoplanets @ AAS241

All times PST. All sessions in the Seattle Convention Center, unless otherwise noted

### Saturday 7 Jan 2023

#### ExoPAG 27 (Day 1)

8:30 am – 5:05 pm, Room 4C-2

Agenda can be found here:

<https://exoplanets.nasa.gov/exep/events/388/exopag-27>

#### NASA's TESS Mission Interactive Data Workshop

9:00 am – 5:00 pm, Room 303

### Sunday 8 Jan 2023

#### ExoPAG 27 (Day 2)

8:30 am – 12:30 pm, Room 4C-2

#### Help NASA Observe Distant Worlds with Exoplanet Watch

10:00 am – 12:00 pm, Room 213

#### Joint PAG Session with NASA

Astrophysics Director Mark Clampin

3:00 pm – 5:00 pm, Room 4C-3

### Monday 9 Jan 2023

#### NASA-NSF Ground-based Support for Exoplanet Discovery and Characterization

9:00 am – 11:30 am, Room 304

### Monday 9 Jan 2023

#### (continued)

#### 132. NASA Town Hall

12:45 pm – 1:45 pm Ballroom 6E

#### Afternoon Oral & Splinter Sessions

2:00 pm – 3:30 pm:

#### NASA's Great Observatories Maturation Program

Room 4C-3

#### 142. Extrasolar Planets: Direct Imaging II

Room 608

#### 145. Rocky Exoplanet Populations and Composition

Room 612

#### 151. Extrasolar Planets: Atmospheres II

Room 620

#### 152. TESS Discoveries

Room 2A

#### 154. Circumstellar Disks II

Room 3B

#### Evening iPoster Sessions:

5:30 pm – 6:30 pm Exhibit Hall 4AB

#### 159. Early Transiting Exoplanet Science with JWST

#### 164. Extrasolar Planets: Direct Imaging

#### 165. Extrasolar Planets: Formation of Planets and Protoplanetary Disks I

#### Evening Splinter Session:

JWST Town Hall

6:30 pm – 8:00 pm Ballroom 6B

# In this session



Agenda			
Time	Title	In Person/Remote	Speaker
9:00 am	The NN-EXPLORE Program	In Person	David R. Ardila (NASA Exoplanet Program Office)
9:08 am	High Resolution Speckle Imaging	In Person	Steve Howell (NASA Ames Research Center)
Instrument Status and Recent Results			
9:16 am	NEID	In Person	Jason Wright (Penn State)
9:24 am	MAROON-X	Remote	Andreas Seifahrt (University of Chicago)
9:32 am	EXPRES	In Person	Joe Llama (Lowell Observatory)
9:40 am	SMARTS/Chiron	In Person	Todd Henry (RECONS Institute)
9:48 am	MINERVA-Australis	Remote	Rob Wittenmyer (University of Southern Queensland)
9:56 am	Keck Planet Finder	Remote	Samuel Halverson (Jet Propulsion Laboratory)
Extreme Precision Radial Velocity Foundational Science - ROSES-2020			
10:04 am	NASA's EPRV program	In Person	Jennifer Burt (Jet Propulsion Laboratory)
10:12 am	NEID Sun-As-A-Star Observations for Evaluating Stellar Variability Mitigation Strategies	In Person	Jason Wright (Penn State) on behalf of Eric Ford (Penn State)
10:25 am	Disentangling Stellar and Planetary Signatures with Interferometric Images and Extreme Precision Radial Velocities	In Person	Rachael Roettenbacher (U. Michigan)
10:38 am	Advances in 3D Realistic Modeling of Solar-type Stars to Study Stellar Jitter and Photospheric and Subsurface Dynamics	In Person	Irina Kitiashvili (NASA Ames Research Center)

Those in Webex: Raise your hand if you want to talk or ask questions in the chat